

What is NAS and How Can Human Milk Help?

Neonatal Abstinence Syndrome (NAS) is a term for a group of conditions a baby experiences when withdrawing from exposure to certain drugs in utero.¹



One baby is born every 15 minutes with Neonatal Abstinence Syndrome (NAS).⁴



The number of babies born with NAS has increased five-fold since 2000, largely due to the overuse of opiate prescriptions for pain.⁴



On average, babies born with NAS spend 16 days in the hospital = \$66,000*
On average, babies born without NAS spend 3 days in the hospital = \$3,500^{2,3}

What does NAS cause?

NAS increases risk of:

- Low birth weight
- Jaundice
- Admission to the newborn intensive care unit
- Medication to treat withdrawal symptoms

What is the treatment recommendation for NAS?

Medically supervised withdrawal with Methadone, Buprenorphine for 5-30 days including;

- Swaddle baby (wrap snugly in a blanket)
- Skin-to-skin care
- Quiet, dimly lit room
- Breast milk reduces the duration of NAS, symptom severity and the associated costs of treatment, in addition to conferring protection against the most common and costly conditions in infancy.^{2,3,4,5,6,7}

What causes NAS?

NAS most often is caused by drugs called opioids, specifically:

- Codeine
- Hydrocodone (name brand Vicodin)
- Morphine (name brands Kadian, Avinza)
- Oxycodone (name brands OxyContin, Percocet)
- Tramadol
- Methadone
- Heroin

Other prescription drugs that can cause NAS include:

- Antidepressants (used to treat depression)
- Benzodiazepines (sleeping pills)

What should I look for?

Signs and symptoms of NAS can be different for every baby. Most happen within three days (72 hours) of birth, but some may be evident right after birth or not until a few weeks after birth.

- Body shakes (tremors), seizures (convulsions), overactive reflexes (twitching) and tight muscle tone
- Fussiness, excessive crying or having a high-pitched cry
- Poor feeding or sucking or slow weight gain
- Breathing problems, including rapid breathing
- Fever, sweating or blotchy skin
- Trouble sleeping and lots of yawning
- Diarrhea or vomiting
- Stuffy nose or sneezing

*Eighty-two percent of the time, the charges are paid by state Medicaid programs.⁴

¹ The Helping to End Addiction and Lessen (HEAL) Substance Use Disorders Act of 2018. Section 201: Caring Recovery for Infants and Babies.

² Meier PP, Bode L. Health, nutrition, and cost outcomes of human milk feedings for very low birth weight infants. *Advances in Nutrition* 2013; 4(6): 670-671.

³ National Institute on Drug Abuse; National Institutes of Health; U.S. Department of Health and Human Services. Accessed Nov 2018.

⁴ Patrick SW, Davis MM, Lehman CU, Cooper WO. Increasing incidence and geographic distribution of neonatal abstinence syndrome: united states 2009-2012. *Journal of Perinatology* 2015; 35(8): 650-655.

⁵ Johnson TJ, Patel AL, Bigger HR, Engstrom JL, Meier PP. Economic benefits and costs of human milk feedings: a strategy to reduce the risk of prematurity-related morbidities in very-low-birth-weight infants. *Advances in Nutrition* 2014; 5(2): 207-212.

⁶ Vohr BR, Poindexter BB, Dusick AM, McKinley LT, Higgins Rd, Langer JC, et al. Persistent beneficial effects of breast milk ingested in the neonatal intensive care unit on outcomes of extremely low birth weight infants at 30 months of age. *Pediatrics* 2007; 120(4): e953-959.

⁷ AAP. Breastfeeding and the use of human milk. *Pediatrics* 2012; 129(3):e827-841.